UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,072	08/22/2003	Heinrich Roder	021607.0101USPT	8444

7590 01/30/2006	EXAMINER

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ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/646,072	RODER, HEINRICH
	Examiner	**Art Unit**	
	David A. Vanore	2881	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33,35,41,43,69 and 70* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33,35,41,43,69,70* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed January 18, 2006 have been fully considered but they

are not persuasive.

2.   Applicant has amended claims 33 and 41 to additionally require the previously

claimed data transformation step, and further including transformation from "a first

space to a second space."

3.   The applicant in reply has argued that the prior art of Yates, III et al. (USPN

6,017,693) fails to teach "transformation from a first space to a second space" at pages

12-13 of the response.

4.   As pointed out previously however, Yates, III et al. teaches a data transformation

step utilizing a Fourier transformation (Note Col. 6-7 of Yates, III et al.). Fourier

transforms necessarily transform data from a first space to a phase space

representation.

5.   Therefore, the amendment to the claim includes limitations encompassed by the

prior art of Yates, III et al.

6.   Since the Applicant has based the rebuttal of the previously made rejection of all

claims on the purported lack of teaching in Yates, III et al. to the newly added

limitations, the rebuttal is not persuasive.

Drawings

7.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show

every feature of the invention specified in the claims. Therefore, the first and second

space of transformed data recited in claims 33 and 41 must be shown or the feature(s)

canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

8.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

9.   Claims 33 and 41 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the

invention.

10.   The specification fails to point out or describe a first space from which data is

then transformed into a second space, the variables associated with said spaces which

define the spaces, and how the transformation step recited in claims 33 and 41 modifies

the data set of one space to exist within a second space.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 33, 35, 41, and 43 are rejected under 35 U.S.C. 102(b) as being clearly

anticipated by Yates, III et al. (USPN 6,017,693 A).

Claim 41 recites a system for processing mass spectrometry data comprising a

storage unit and a processing unit in communication with the storage unit and

configured to articulate the method recited in claim 33. Therefore, claims 33 and 41 will

be treated simultaneously below.

Yates, III et al. teaches a system and method for processing mass spectrometry

data utilizing a computing means (Col. 4 Lines 30-34) having a processing means and a

storage unit which are in communication with one another (Note Example 1 at Col. 11

Lines 14-32).

The storage unit receives raw data from the mass spectrometer and stores

transformed data where the transformed data has a hierarchical data format. In the

context of Yates, III et al., the definition of hierarchical must be taken into account. As

defined, the term hierarchical relates to the term hierarchy which implies having a

graded or ranked organization. In the instant case, the raw spectral data is appended to

indicate the presence or lack of presence of certain peptides. This substantially

coincides with the "grading" of elements in the mass spectrometer data. Such an

operation transforms the raw data to a graded dataset where certain features of each

sequence in the dataset are indicated on each said sequence. Note Col. 11 Lines 1-13

and Fig. 6A where the steps of receiving raw data and sorting said raw data to impart a

structure to the raw data are illustrated. Fig. 6A is an illustration of the "transformation"

of raw data in Yates, III et al. into a transformed data.

The transformation of the data is carried out utilizing a Fourier transform

technique (Col. 6-7), which converts data from a first space into a phase space

representation of the data.

This transformed data is saved onto a storage medium, note Col. 9 Lines 42-49.

Regarding the limitation where the transformed data having a hierarchical data format

for use at multiple resolutions, Yates III, et al. teaches that the data is appended to

indicate the presence of certain peptides, and further parses the data into 2 groups

where the first group consists of the 200 most intense ions and the second group

comprising the remaining ions. The second group is divided into 10 mass regions,

where the maximum intensity is normalized within each region. Resolution is taken in

the context of this application to mean the fineness of detail that can be distinguished of

a given characteristic of a set of data. In the instant application and prior art, Yates, III

et al. teaches the division of the data based on the intensity over different mass regions.

Therefore, each different mass region data group provides a different resolution of the

detected mass spectral data and the data format thus created by the method and

apparatus of Yates, III et al. is useable at multiple resolutions.

The processing unit of the computing means of Yates, III et al. carries out the

actions above automatically (Col. 4 Lines 30-34) and is further configured to articulate

the following method steps:

1) The receiving of a request to perform an operation utilizing at least a portion

of the transformed data is taught in Yates, III et al. After the data transformation

described above, Yates, III et al. teaches that a search operation is performed on the

transformed data as illustrated in Fig. 6B and described at Col. 9-10 in the disclosure of

Yates, III et al. The computer processor must respond to a request to carry out such an

operation, whether the source is a human operator prompting the operation or whether

by code internal to the processing means in the form of hardware(firmware) or software.

The fact that an operation is carried out carries with it the implicit reception of a request

to perform the operation.

2) The accessing of transformed data corresponds to the processor accessing

the storage unit and loading the transformed data of above. Note Col. 9 Lines 50-54

where Yates, III et al. teaches that the previously discussed transformed data is loaded. The loading corresponds not only to the accessing of the transformed data, but also to the production of the transformed data because in a computer, a processor must first access a data storage means, locate, and then retrieve the desired data by cause the storage means to output the data to the processing means.

3) The selection of parameters to use for a selected resolution of the transformed data. In Fig. 6B, step 636 requires the loading of search parameters. The use of such parameters and the fact that they are used to define the limits of the search operation implicitly mean that they are selected. Without first being selected, the parameters cannot be used.

4) The production of a transformed data set at the selected resolution as a function of the selected parameters. As pointed out above, the loading step corresponds to the accessing and production of data from a transformed dataset.

5) The performance of the requested operation of the transformed dataset at the selected resolution to generate a result for the operation in response to receiving the request. In the instant case, Yates, III et al. teaches that the selected operation is a search operation carried out in accordance with the details of Fig. 6C using the previously indicated transformed data and in accordance the previously established search parameters (Col. 9 Line 50 through Col. 10 Line 44).

Regarding claims 35 and 43, said claims recite that the operation includes searching for transformed data having certain properties. As previously pointed out,

Yates, III et al. transforms raw data into transformed data and subsequently searches

said transformed data for elements of said data in accordance with search parameters,

note again Item 636. These parameters necessarily indicate "certain properties" of said

data. In Yates, III et al. the main goal of the method and apparatus recited is the

correlation of a peptide fragment to a parent protein and the search of the transformed

data in Yates, III et al. is performed to indicate the presence of a certain protein (Note

Step 640).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 69 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Yates, III et al. (USPN 6,017,693) in view of Higgs, Jr. et al. (USPN 5,885,841).

Yates, III et al. teaches all the required limitations of claims 33 and 41 as pointed

out above.

Yates, III et al. fails to teach or suggest the use of a "wavelet transformation" to

generate the hierarchical data format pointed out above.

Higgs, Jr. et al. teaches at Col. 17 Lines 42 to 68 that the ion spectral data, called

the ion chromatogram in Higgs, Jr. et al., has applied thereto a wavelet transformation is

processed to output filtered spectral data.

Higgs, Jr. et al. modifies Yates, III et al. to utilize wavelet transformations to

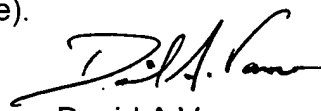output spectral data which is filtered and to generate a spectral baseline

It would have been obvious to one having ordinary skill in the art at the time the

invention was made to process spectral data using a wavelet transformation because

Higgs, Jr. et al. teaches wavelet transformations are advantageous in that the output of

such a transform is of higher quality, or reduced noise (Col. 18 Lines 1-18), relative to

systems which process data which do not utilize wavelet transformations.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to David A. Vanore whose telephone number is (571) 272-

2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

David A Vanore   1/26/06

Patent Examiner

Art Unit 2881

Technology Center 2800